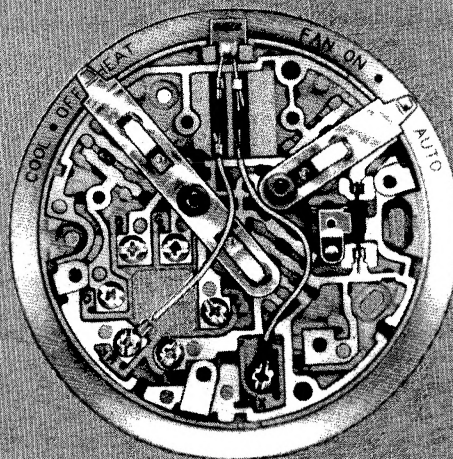


# Honeywell

THE Q539 SUBBASES PROVIDE COOLING ANTICIPATORS, WIRING TERMINALS, AND MOUNTING BASES FOR T87F THERMOSTATS. MOST ALSO PROVIDE SYSTEM AND FAN SWITCHING FOR HEATING, COOLING, AND HEATING-COOLING THERMOSTATS.

- ☐ Screw terminals for electrical connections are letter-coded for quick, accurate installation.
- ☐ Shunt type carbon heater provides cooling anticipation for close temperature control.
- ☐ Guide posts assure mounting and leveling necessary to maintain thermostat calibration.
- ☐ Fan and system switch levers (available on most models) located at top edge for convenient control.
- ☐ Indicator LED available on most models.
- ☐ Mount directly on wall or on standard outlet box with accessory wallplate.
- ☐ Q539P with indicator LED for oil primary systems (HEAT-only).

## THERMOSTAT SUBBASES



## Q539A,B,C,F, G,H,J,P

# SPECIFICATIONS

## IMPORTANT

THE SPECIFICATIONS GIVEN IN THIS PUBLICATION DO NOT INCLUDE NORMAL MANUFACTURING TOLERANCES. THEREFORE, THIS UNIT MAY NOT MATCH THE LISTED SPECIFICATIONS EXACTLY. ALSO, THIS PRODUCT IS TESTED AND CALIBRATED UNDER CLOSELY CONTROLLED CONDITIONS, AND SOME MINOR DIFFERENCES IN PERFORMANCE CAN BE EXPECTED IF THOSE CONDITIONS ARE CHANGED.

## TRADELINE MODELS

TRADELINE models are selected and packaged to provide ease of stocking, ease of handling, and maximum replacement value. Specifications of TRADELINE models are the same as those of standard models except as noted below.

Q539A, J Thermostat Subbases—provide COOL-OFF-HEAT system and AUTO-ON fan switching.

Q539C Thermostat Subbase—provides COOL-OFF system and AUTO-ON fan switching.

Q539P Thermostat Subbases—provide HEAT-only and indicator LED for oil primary systems.

### FEATURES:

- TRADELINE package with cross reference label and special instruction sheet.
- Textured beige finish designer models (available on some TRADELINE models).

## STANDARD MODELS

Refer to Table 1 for the general specifications for Q539 Thermostat Subbases.

### ELECTRICAL RATINGS:

#### Subbase Switches:

Resistive: 2A at 30 Vac maximum.

Inductive: 1.5 AFL, 7.5 ALR at 30 Vac maximum.

Cooling Anticipator—24 to 30 Vac.

Optional Indicator LED—30 Vac.

Terminal Designations: Refer to Table 2.

**MOUNTING MEANS:** Two screws provided for wall mounting through holes and slots in subbase. Use Part No. 127293 Wallplate for mounting on an outlet box or for covering old thermostat marks.

**DIMENSIONS:** Diameter—3-11/16 in. [94 mm]; depth with T87F—1-3/4 in. [45 mm].

### OPTIONAL SPECIFICATIONS:

1. Indicator LED available on most models.
2. Q539A available with system switches marked COOL-OFF-RESET-HEAT.
3. Models available with isolated heat-cool circuits for

installations with separate heating and cooling transformers or for systems requiring thermostat control of FAN operation.

### ACCESSORIES:

1. Part No. 129044A Wallplate includes 6 in. [152 mm] wall ring for mounting Q539 Subbase on outlet box or for covering old thermostat mounting marks.
2. TG587F Thermostat guard protects T87F thermostats and Q539 subbases against tampering, damage and unauthorized adjustment of settings.

### THERMOSTAT:

T87F Round Thermostat provides temperature control for 24 to 30 V heating, cooling, or heating-cooling systems.

T87F Designer Round Thermostat provides temperature control for 24 to 30 V heating, cooling, or heating-cooling systems; textured beige finish.

(continued on page 3)

# ORDERING INFORMATION

WHEN PURCHASING REPLACEMENT AND MODERNIZATION PRODUCTS FROM YOUR TRADELINE WHOLESALER OR YOUR DISTRIBUTOR, REFER TO THE TRADELINE CATALOG OR PRICE SHEETS FOR COMPLETE ORDERING NUMBER, OR SPECIFY—

1. Order number.  
— Q539 Subbase, TRADELINE, if desired.
2. Optional Q539 Subbase specifications, if desired.
3. Accessories, if desired.

IF YOU HAVE ADDITIONAL QUESTIONS, NEED FURTHER INFORMATION, OR WOULD LIKE TO COMMENT ON OUR PRODUCTS OR SERVICES, PLEASE WRITE OR PHONE:

1. YOUR LOCAL HONEYWELL RESIDENTIAL SALES OFFICE (CHECK WHITE PAGES OF PHONE DIRECTORY).
2. RESIDENTIAL DIVISION CUSTOMER SERVICE  
HONEYWELL INC., 1885 DOUGLAS DRIVE NORTH  
MINNEAPOLIS, MINNESOTA 55422-4386 (612) 542-7500

IN CANADA—HONEYWELL CONTROLS LIMITED/HONEYWELL LIMITEE, 740 ELLESMERE ROAD, SCARBOROUGH, ONTARIO M1P 2V9, INTERNATIONAL SALES AND SERVICE OFFICES IN ALL PRINCIPAL CITIES OF THE WORLD

TABLE 1—MODEL SPECIFICATIONS

MODEL AND DESCRIPTION	SYSTEM SWITCHING (dpst and dp3t)	FAN SWITCHING (spdt)	SUBBASE TERMINALS												WIRING DIAGRAM
			R	W	Y	B	G	O	X	P	Z	R <sub>c</sub>	R <sub>n</sub>		
Q539A Subbases provide system and fan switching and cooling anticipation to control heating and cooling applications.															
Q539A1014, Q539A4026° for single heating and cooling transformer applications.	COOL-OFF-HEAT	ON-AUTO	X	X	X	X	X	X						Fig. 1 Fig. 2	
Q539A1022 with impedance relay reset switch.	COOL-OFF-HEAT-RESET	ON-AUTO	X	X	X	X	X	X						Fig. 1 Fig. 2	
Q539A1022 with indicator LED for impedance relay reset switch.	COOL-OFF-RESET-HEAT	ON-AUTO	X	X	X	X	X	X	X					Fig. 1 Fig. 2	
Q539A1022 with impedance relay reset switch for heat pump applications.	COOL-OFF-RESET-HEAT	ON-AUTO	X	X	X	X	X	X						Fig. 3	
Q539A1121 with special resistor for gas air conditioning applications.	COOL-OFF-HEAT	ON-AUTO	X	X	X	X <sup>a</sup>	X	X						Fig. 1 Fig. 2	
Q539A1147, Q539A4000° for applications with isolated heating and cooling circuits.	COOL-OFF-HEAT	ON-AUTO		X	X		X					X	X	Fig. 4 Fig. 5	
Q539A1162 used with W884 Comfort Control Center only.	COOL-OFF-HEAT	ON-AUTO	X	X	X	X	X	X						Fig. 1 Fig. 2	
Q539A1196 with "G" terminal isolated on heating for external low voltage fan switch.	COOL-OFF-HEAT	ON-AUTO	X	X	X		X							Fig. 6	
Q539A1394 with indicator LED for oil burner applications <sup>b</sup> .	COOL-OFF-HEAT	ON-AUTO		X	X		X					X	X	Fig. 7	
Q539B1005 with system switching and cooling anticipation for heating and cooling applications. No fan switching.	COOL-OFF-HEAT	NONE	X	X	X	X		X						Fig. 1 Fig. 2	
Q539C1020, Q539C4008° with system and fan switching and cooling anticipation for cooling-only applications.	COOL-OFF	ON-AUTO	X		X		X	X						Fig. 8	
Q539G1000 with system and fan switching for control of heating-only system. No cooling anticipator. Summer fan operation available.	HEAT-OFF	ON-AUTO	X	X		X	X				X <sup>d</sup>			Fig. 9	
Q539H1009 with fan switching, cooling anticipation, and "Z" terminal for remote AUTO FAN switching. No system switching.	NONE	ON-AUTO	X	X	X		X				X			Fig. 10	
Q539J1006, Q539J4000° with system switching and cooling anticipation for electric heat and heat pump applications. Fan relay controls AUTO FAN operation.	COOL-OFF-HEAT	ON-AUTO	X	X	X	X	X	X		X				Fig. 11	

(continued on next page)

Table 1 (continued)

MODEL AND DESCRIPTION	SYSTEM SWITCHING (dpst and dp3t)	FAN SWITCHING (spdt)	SUBBASE TERMINALS												WIRING DIAGRAM
			R	W	Y	B	G	O	X	P	Z	R <sub>c</sub>	R <sub>n</sub>		
Q539J1022 is the same as Q539J1006 for use in W884E Comfort Control Center only.	COOL-OFF-HEAT	ON-AUTO	X	X	X	X	X	X		X				Fig. 11	
Q539P1018 with wiring terminals and indicator LED for heating—only oil burner applications.	NONE	NONE	X	X					X					Fig. 12	

<sup>a</sup>Subbase has "4" terminal which is same as "B" terminal.

<sup>b</sup>R<sub>c</sub> terminal for cooling transformer.

<sup>c</sup>Designer model with textured beige finish.

<sup>d</sup>Subbase has "1" terminal in place of "Z" terminal.

TABLE 2—TERMINAL DESIGNATIONS<sup>a</sup>.

TERMINAL	CONNECTION
R	Transformer.
R <sub>c</sub> <sup>b</sup>	Cooling transformer.
R <sub>n</sub> <sup>c</sup>	Heating transformer.
W	Heating Relay or Valve.
Y	Cooling Contactor.
B <sup>d</sup> (4) <sup>d</sup>	Heating Damper Motor or Changeover Valve (if used).
O <sup>e</sup>	Cooling Damper Motor or Changeover Valve.
G	Fan Relay Coil.
X <sup>f</sup>	Clogged Filter Switch or Lockout Switch (primary control).
P	Heat Pump Contactor Coil.
Z	Q539H low voltage fan switch for control of fan relay in AUTO position for both heating and cooling control.

<sup>a</sup> R1, W1, Y1, (or B1) are not marked on thermostat subbase. They are mounting posts and electrical connections for thermostat.

<sup>b</sup> Cooling transformer in systems with isolated heating and cooling circuits.

<sup>c</sup> Heating transformer in systems with isolated heating and cooling circuits.

<sup>d</sup> Circuit only completed between "R" and "B" with system switch in HEAT position; "4" terminal is the same as Honeywell "B" terminal.

<sup>e</sup> Circuit only completed between "R" and "O" with system switch in COOL position.

<sup>f</sup> Only available on subbases with indicator lights.

<sup>g</sup> Jumpered to humidity controller in Q539K/T87F hookup.

## INSTALLATION

### WHEN INSTALLING THIS PRODUCT...

1. Read these instructions carefully. Failure to follow instructions can damage product or cause a hazardous condition.

2. Check ratings given in instructions and on product to make sure product is suitable for your application.

3. Make sure installer is a trained, experienced service technician.

4. After completing installation, use these instructions to check out product operation.

### CAUTION

1. Disconnect power supply before beginning installation to prevent electrical shock or equipment damage.
2. On systems using a low voltage gas control, never apply a jumper across the control coil terminals. This may burn out the thermostat heat anticipator.

### LOCATION

Locate the subbase about 5 ft [1.5 m] above the floor in an area with good air circulation at average temperature.

Do not mount the subbase where it may be affected by—

- drafts or dead spots behind doors or in corners.
- hot or cold air from ducts.
- radiant heat from the sun, fireplaces, or appliances.
- concealed pipes and chimneys.
- unheated (uncooled) areas behind the subbase, such as an outside wall.

### MOUNTING AND WIRING

Disconnect power supply before beginning installation to prevent electrical shock or equipment damage.

All wiring must comply with local codes and ordinances.

1. In replacement applications, check the existing subbase wires for cracked or frayed insulation. Replace any wires in poor condition. If the wire is plastered into the wall, make a hole next to the wires and loosen the wires so that

they can be pushed back into the wall later.

2. In new installations, run wiring (if necessary) to the subbase location.

3. Connect the wires to the terminals inside the subbase. Refer to equipment manufacturer's instructions for Q539 wiring diagrams. If not available, refer to Figs. 1 through 12.

4. Push excess wire back through the hole and plug any opening with insulation to prevent drafts that may affect performance.

5. Loosely fasten the thermostat subbase to the wall with a screw through the left mounting hole. Adjust the subbase so that it is approximately level and start the second screw through the right mounting slot. Do not tighten.

6. Level the thermostat subbase using a plumb line or spirit level as shown in Fig. 13.

7. Tighten mounting screws.

#### IMPORTANT

This thermostat is calibrated at the factory while mounted at true level. Any inaccuracy in leveling during mounting causes control point deviation.

8. Mount and wire the thermostat to the thermostat subbase by tightening three captive mounting screws on thermostat. Tightening the three captive mounting screws completes all electrical connections.

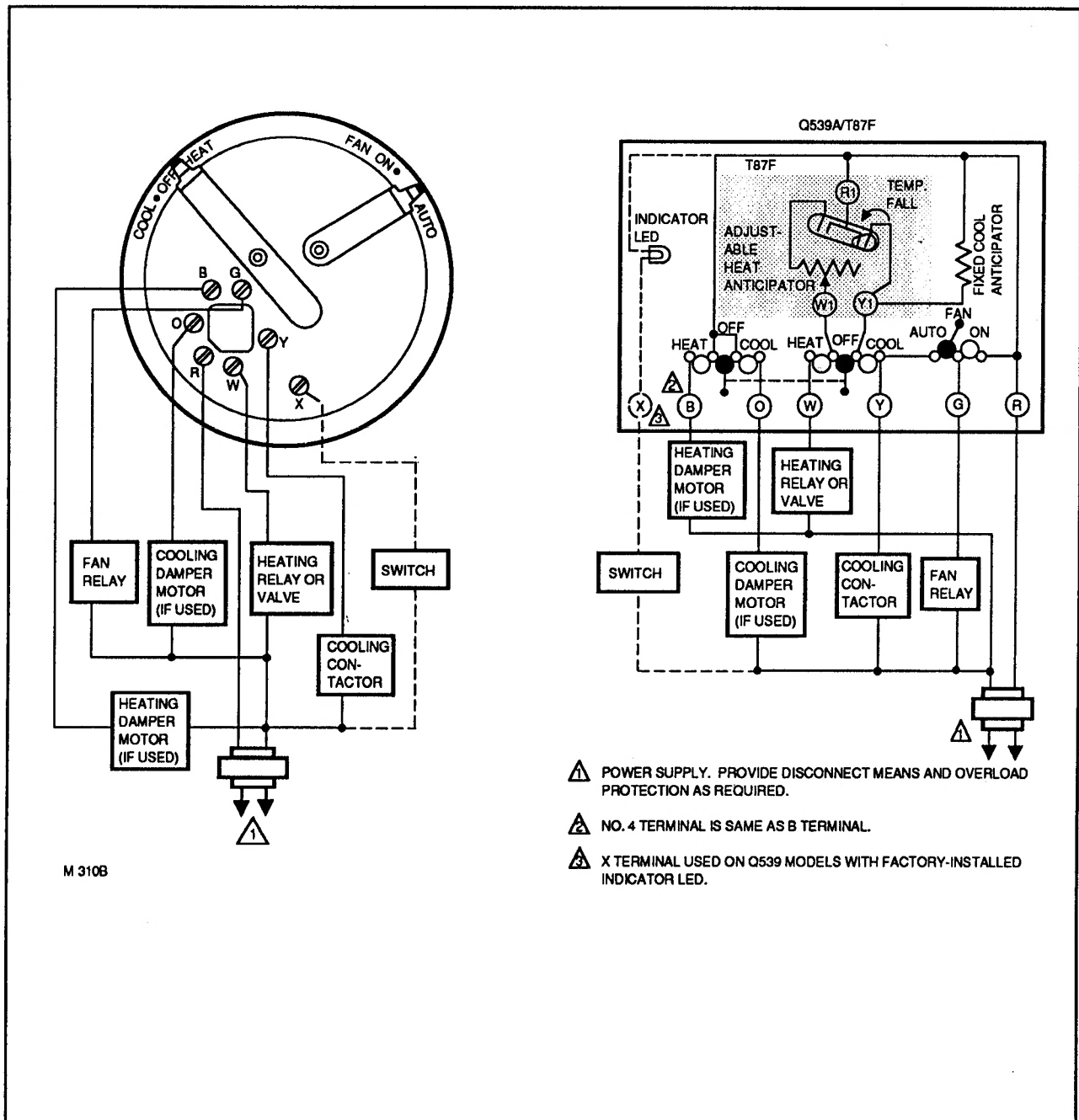


FIG. 1—Q539A,B,C IN HEATING-COOLING APPLICATION USING COMMON POWER SUPPLY.

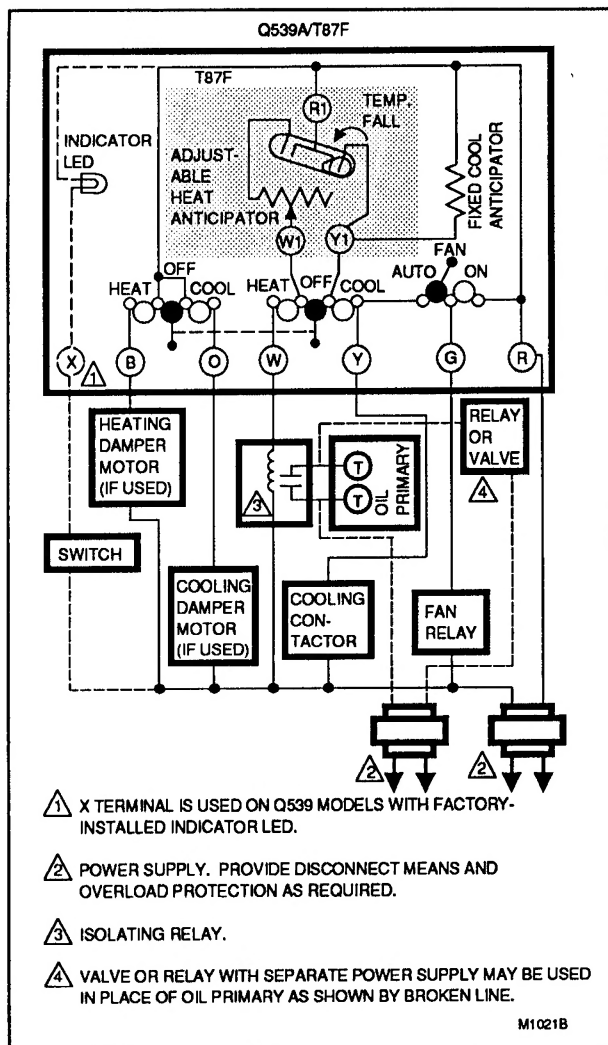


FIG. 2—Q539A,B IN HEATING-COOLING APPLICATION WITH DAMPER MOTORS AND ISOLATION RELAY.

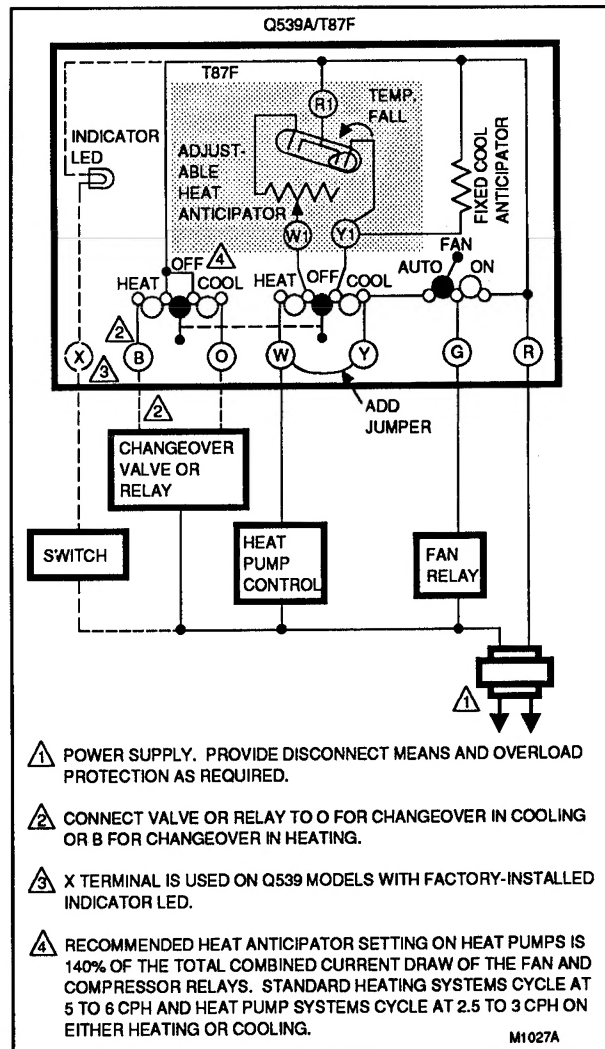


FIG. 3—Q539A IN HEAT PUMP APPLICATION.

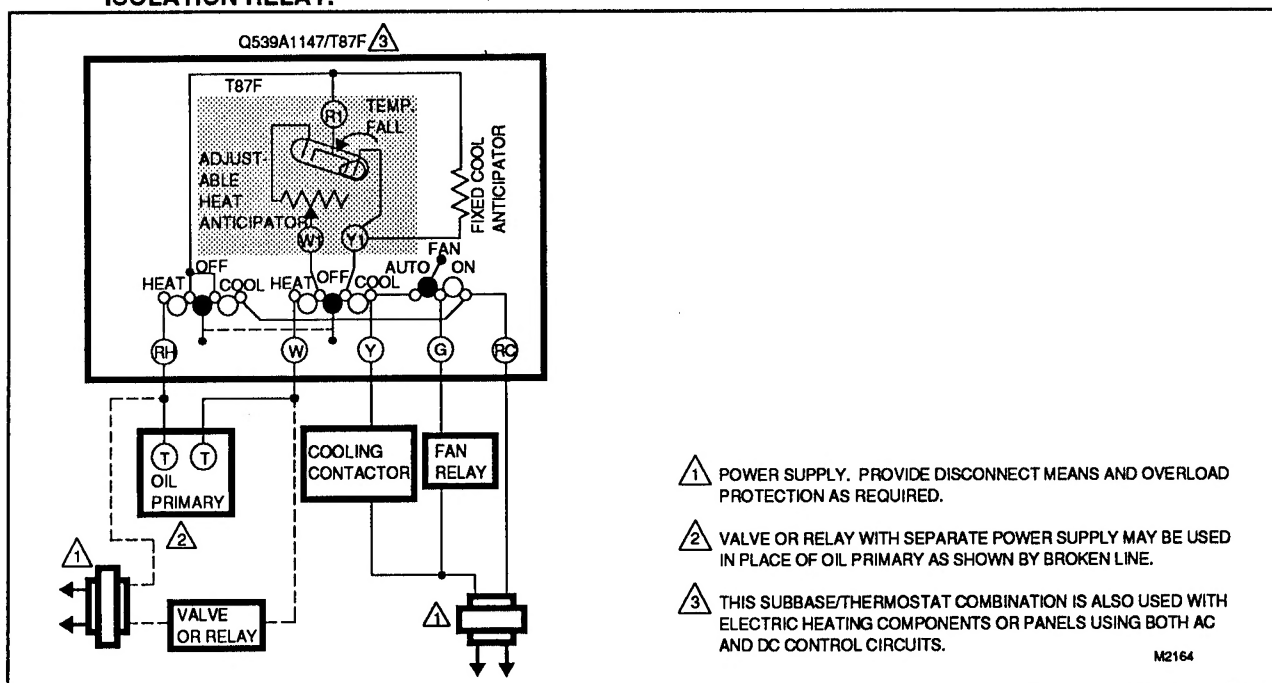


FIG. 4—Q539A1147 IN HEATING-COOLING APPLICATION WITH ISOLATED CIRCUITS.

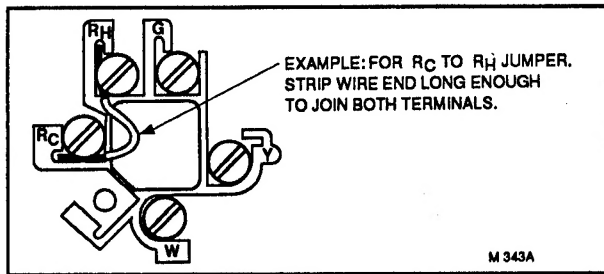


FIG. 5—JUMPER "R<sub>C</sub>" AND "R<sub>H</sub>" TERMINALS FOR COMMON HEATING-COOLING TRANSFORMER IN Q539A1147.

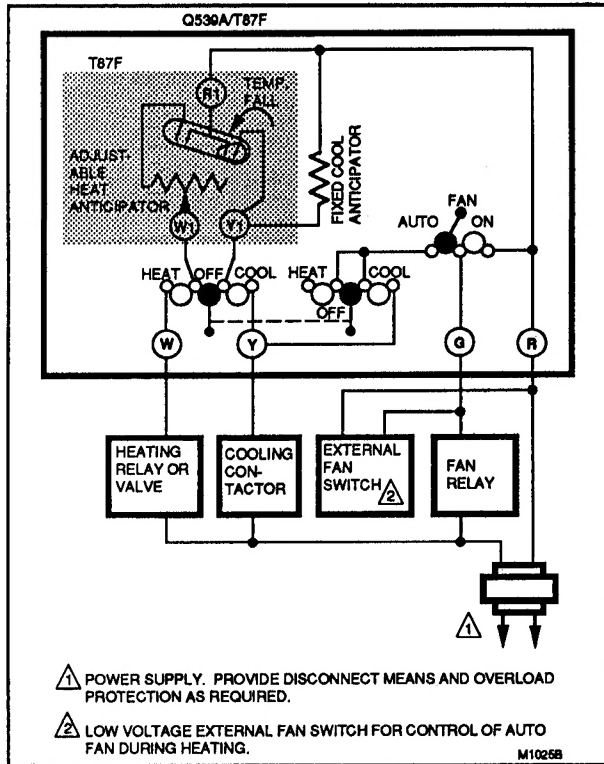


FIG. 6—Q539A IN TYPICAL HOOKUP.

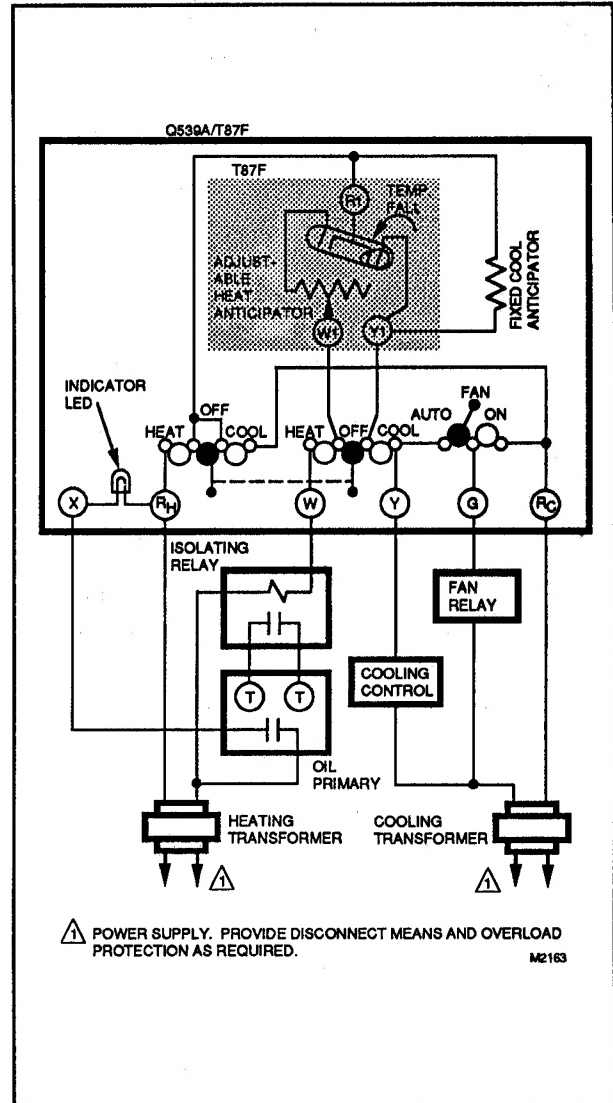


FIG. 7—Q539A IN HEATING-COOLING APPLICATION WITH INDICATOR LED.

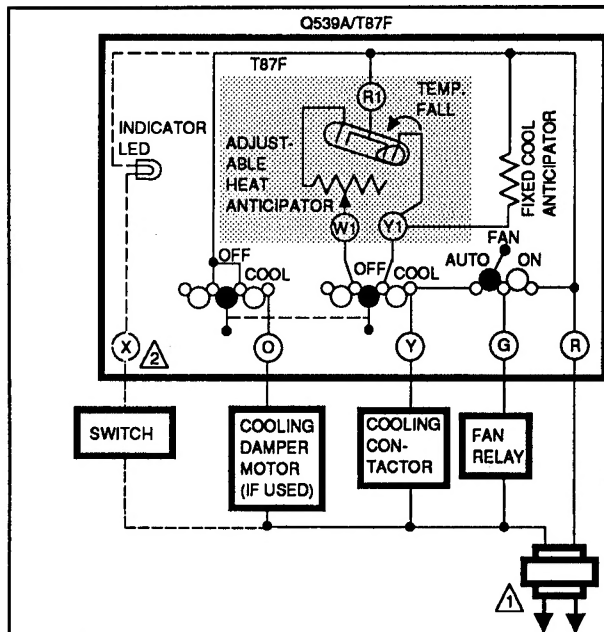


FIG. 8—Q539C IN COOLING-ONLY APPLICATION.



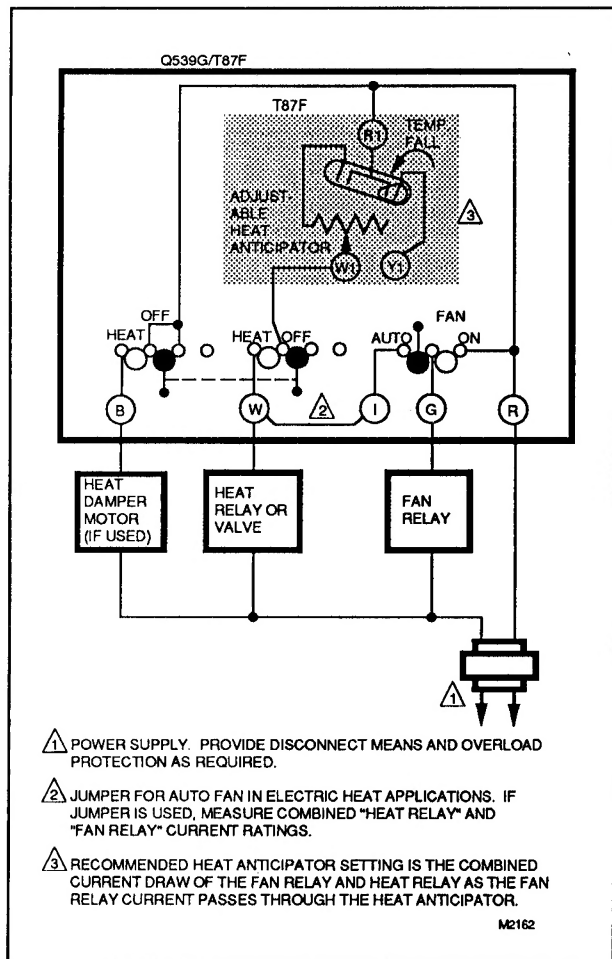


Fig. 9—Q539G IN HEATING APPLICATION WITH AUTOMATIC FAN OPERATION.

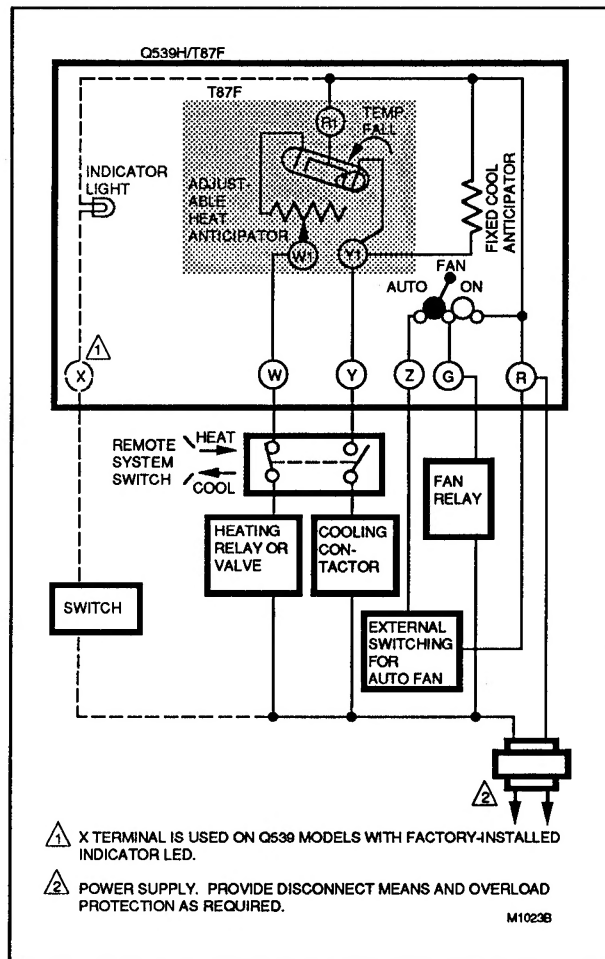


Fig. 10—Q539H IN HEATING-COOLING APPLICATION AND AUTOMATIC FAN OPERATION SWITCHING.

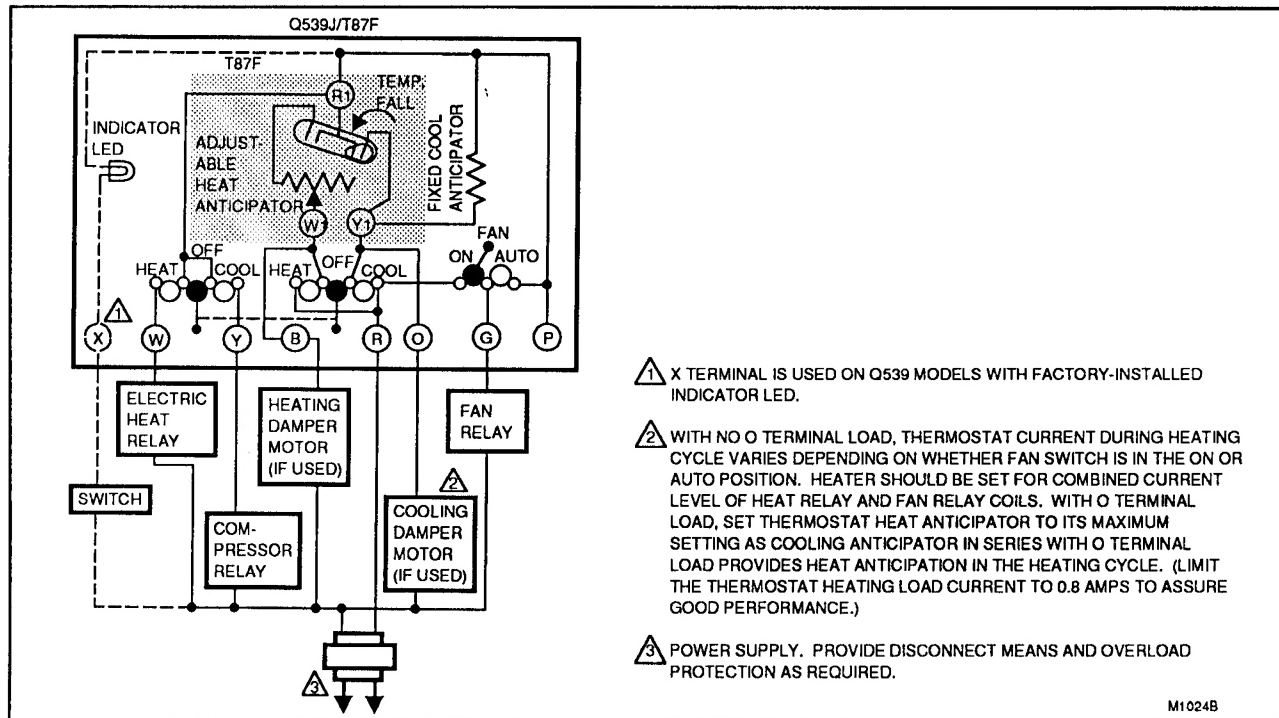


Fig. 11—Q539J IN HEATING-COOLING APPLICATION WITH AUTO FAN OPERATION.



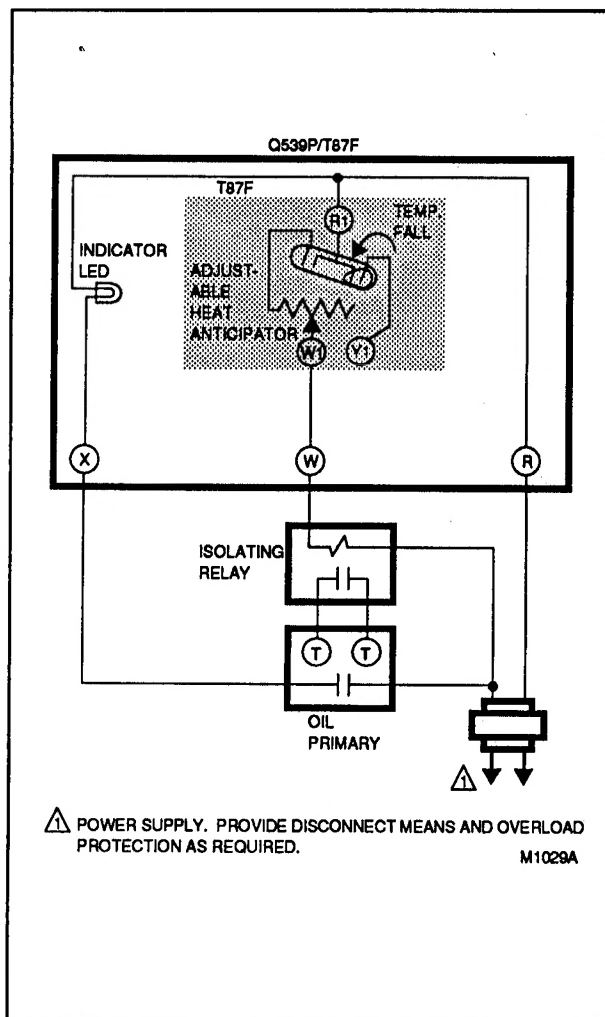


Fig. 12—Q539P IN HEATING-ONLY SYSTEM WITH REMOTE LOCKOUT INDICATION.

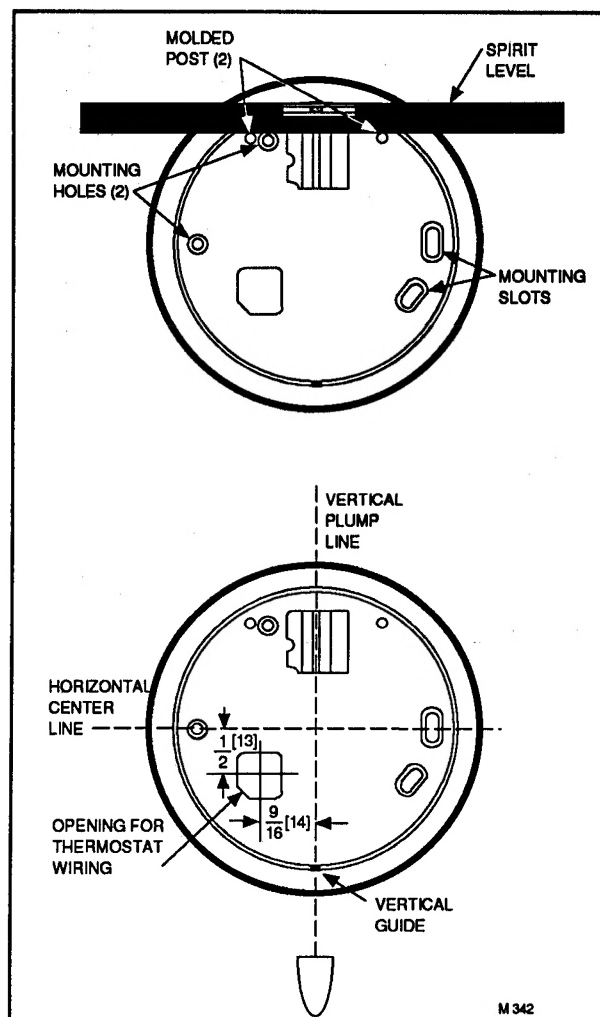


Fig. 13—LEVEL Q539 USING A SPIRIT LEVEL OR PLUM LINE (dimensions are in in. [mm]).

## CHECKOUT

**NOTE:** When adding a subbase to a thermostat with positive OFF, make certain the positive OFF switch on the thermostat is in the ON position so the system can be manually controlled from the subbase system switch.

When installation is complete, turn on power supply and check system operation as follows:

### SUBBASES WITH SYSTEM OR FAN SWITCHING

1. With Q539 system switch (or remote system switch) set at HEAT and fan switch set at AUTO, turn the thermostat dial at least 5° F [3° C] above room temperature. Heating should start immediately; the fan should start after a short delay (immediately with Q539G (with jumper) or Q539J).

2. With Q539 system switch (or remote system switch) set at COOL and fan switch set at AUTO, turn the thermostat dial at least 5° F [3° C] below room temperature. Cooling and fan should start. (External switch must be made in Q539H hookup.)

3. Set system switch at OFF and fan switch at FAN ON. Fan should run continuously. Turn thermostat 5° F [3° C] below room temperature. Heating and cooling equipment cannot be actuated by the thermostat (except in system with dpst remote changeover switch).

4. Operate entire system at least one complete cycle with switches in each position before leaving installation. Turn thermostat dial to the desired setting and move the system and fan switches to their desired positions.

### SUBBASE WITHOUT MANUAL SWITCHES (Q539P)

1. On Q539P subbase, turn thermostat dial 5° F [3° C] above room temperature to call for heat. Heating should start immediately, the fan should start after a short delay.

2. Turn thermostat dial 5° F [3° C] below room temperature. Heating and fan should shut off.

3. Operate the entire system at least one complete cycle before leaving installation. Turn thermostat dial to the desired setting.

## OPERATION

The Q539 Subbase provides cooling anticipation, wiring terminals, mounting base, and system and fan switching for the T87F Thermostat.

The Q539 Subbase mounts directly to the wall using two mounting screws. The T87F Thermostat mounts to the Q539 Subbase using three captive screws. Tightening these screws into the subbase also completes all electrical

connections between the subbase and the thermostat.

The HEAT-OFF-COOL system switch selects either heating or cooling or turns the system off. The FAN-ON-AUTO fan switch either sets the fan to turn on automatically during heating or cooling or allows the fan to run continuously.

# NOTES

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**Honeywell Inc.**  
1885 Douglas Drive N.  
Golden Valley, MN 55422-4386

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